

IN THE CLAIMS

The following is a listing of the claims in accordance with 37 C.F.R. §1.121.

1. (currently amended) A CT imaging system, comprising:

an X-ray source comprising two or more discrete[[,]] emission points, ~~wherein the emission points are configured to be individually activated and~~ wherein each emission point, when activated, emits a respective conical or fan-shaped stream of radiation through a respective portion of a field of view such that successive emissions by different emission points occur at different view angles; [[and]]

a detector array comprising a plurality of detector elements, wherein each detector element may generate one or more signals in response to the respective streams of radiation; and

a system controller configured to control the two or more emission points and to acquire the one or more signals from the plurality of detector elements.

2. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the two or more discrete[[,]] emission points comprise X-ray tubes.

3. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the X-ray source comprises one of a solid-state X-ray source ~~and~~ or a thermionic X-ray source.

4. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the two or more discrete[[,]] emission points comprise field emitters.

5. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the detector array comprises a flat panel detector.

6. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the detector array comprises an energy discrimination detector.
7. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the X-ray source comprises duplicate emission points along the longitudinal axis.
8. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the X-ray source comprises offset emission points along the longitudinal axis.
9. (currently amended) The CT imaging system[[,]] as recited in claim 1, wherein the two or more emission points are rotated about the field of view such that each emission point, when activated, emits [[the]] a respective stream of radiation from a respective view angle.
10. (currently amended) The CT imaging system[[,]] as recited in claim 9, wherein the two or more emission points are rotated by mechanically rotating the emission points about the field of view.
11. (currently amended) The CT imaging system[[,]] as recited in claim 9, wherein the two or more emission points are effectively rotated by activation of stationary emission points disposed in a ring about the field of view.
12. (currently amended) The CT imaging system[[,]] as recited in claim 11, wherein the stationary emission points are configured to be sequentially activated.
13. (currently amended) The CT imaging system[[,]] as recited in claim 9, wherein a first subset of the two or more emission points are activated at a first set of view angles and wherein a second subset of the two or more emission points are activated at a subset of the first set of view angles.

14. (currently amended) The CT imaging system[[,]] as recited in claim 13, wherein the first set of view angles comprises every view angle and wherein the subset comprises every other view angle.

15. (currently amended) The CT imaging system[[,]] as recited in claim 9, wherein the flux of each respective stream of radiation is determined based on at least the respective view angle ~~and a respective path length through a patient.~~

16. (currently amended) The CT imaging system[[,]] as recited in claim 1, further comprising:

~~a system controller configured to control the one or more X-ray sources and to acquire the one or more signals from the plurality of detector elements via a data acquisition system;~~

a computer system configured to receive the one or more signals and to process the one or more signals to generate one or more images; and

an operator workstation configured to display the one or more images.

17. (currently amended) A method for CT imaging, the method comprising the acts of:

~~rotating an X-ray source about a field of view, wherein the X-ray source comprises two or more, discrete emission points;~~

~~individually activating at least two of the emission points at view angles around the field of view, such that each emission point emits a respective stream of radiation through a respective portion of the field of view when activated;~~

emitting a respective conical or fan-shaped stream of radiation from each of two or more X-ray emitters through a respective portion of a field of view, wherein successive emissions by different emission points occur at different view angles; and

acquiring a plurality of signals from a detector, wherein the plurality of signals are generated in response to the respective streams of radiation; ~~and~~

~~processing the plurality of signals to generate one or more images.~~

18. (currently amended) The method[[,]] as recited in claim 17, wherein ~~individually activating at least two of the emission points~~ emitting the respective conical or fan-shaped streams of radiation comprises activating a first set of emission points at a first set of view angles and activating a second set of emission points at a second set of view angles.

19. (currently amended) The method[[,]] as recited in claim 18, wherein the second set of view angles comprises a subset of the first set of view angles.

20. (currently amended) The method[[,]] as recited in claim 17, further comprising the act of:

determining the flux of each stream of radiation based on at least the respective view angle ~~and a respective path length through a patient.~~

21. (currently amended) The method[[,]] as recited in claim 17, ~~wherein rotating the X-ray source comprises~~ comprising mechanically rotating the ~~X-ray source~~ two or more X-ray emitters about the field of view.

22. (currently amended) The method[[,]] as recited in claim 17, ~~wherein effectively rotating the X-ray source comprises~~ comprising sequentially activating the two or more emission points ~~in a sequence~~, wherein the two or more emission points are disposed in a stationary ring about the field of view.

23. (currently amended) A computer program, provided on one or more computer readable media, for imaging a field of view, comprising:

~~a routine for rotating an X-ray source about a field of view, wherein the X-ray source comprises two or more, discrete emission points; and~~

a routine for ~~individually activating at least two of the emission points at view angles around the field of view, such that each emission point emits a respective stream of~~

~~radiation through a respective portion of the field of view when activated~~ emitting a respective conical or fan-shaped stream of radiation from each of two or more X-ray emitters through a respective portion of a field of view, wherein successive emissions by different emission points occur at different view angles.

24. (currently amended) The computer program[[,]] as recited in claim 23, further comprising:

a routine for acquiring a plurality of signals from a detector, wherein the plurality of signals are generated in response to the respective streams of radiation; and

a routine for processing the plurality of signals to generate one or more images.

25. (currently amended) The computer program[[,]] as recited in claim 23, wherein the routine for ~~individually activating at least two of the emission points~~ emitting the respective conical or fan-shaped streams of radiation activates a first set of emission points at a first set of view angles and activates a second set of emission points at a second set of view angles.

26. (currently amended) The computer program[[,]] as recited in claim 25, wherein the second set of view angles comprises a subset of the first set of view angles.

27. (currently amended) The computer program[[,]] as recited in claim 23, comprising:

a routine for determining the flux of each stream of radiation based on at least the respective view angle ~~and a respective path length through a patient.~~

28. (canceled)

29. (new) A CT imaging system, comprising:

an X-ray source comprising two or more azimuthally offset emission points, wherein each emission point, when activated, emits a respective conical or fan-shaped stream of radiation through a respective portion of a field of view;

an X-ray controller configured to activate the two or more emission points such that only one emission point is active at a time and each emission point is activated at a different view angle than the preceding emission point;

a detector array comprising a plurality of detector elements, wherein each detector element may generate one or more signals in response to the respective streams of radiation.